

Analysis on the Operational Structure of Green Food Enterprises in Heilongjiang Province

Li Cuixia, Liu Dayong

Northeast Agricultural University, Harbin, Heilongjiang 150030, China

Abstract: Green food industry in Heilongjiang has ranked top in China after 15 years of efforts. There is no doubt that further developments of green food industry will make much more contributions to provincial economy and to raise farmers' income. While, there are evidences of unbalance in industrial structure and clear defects which will be the main hindering factors for its further developments. Developing strategies were presented in this presentation, that is, favorable governmental policies, and stable base constructions, large scale cooperation, collective orientation, technological innovation and famous brands will be the only alternative for the development of green food industry. [Nature and Science. 2006;4(4):21-25].

Keywords: Heilongjiang Province; Green Food; Enterprises; Operational Structure

Introduction

In late 1990s, agricultural economy in China encountered the problems of low prices of agricultural products, increases in productivity with no increase in farmer's income, and serious defects of industrial structure. Though the total crop output reached 30 billion kilograms in Heilongjiang province, there was the problem of insufficient demands, which called for the strategy of "developing green food and taking specialized path". At present, there are 7 dominating green food series in Heilongjiang province, including, soybean, maize, rice, dairy, forest products, beverages and local products, and the industrial mode of connections of leading enterprises, producing bases and farmers has come into being.

1. Current situations and trend of green food industry in Heilongjiang province

1.1 Current situations of green food industry

Since 1990, Green food industry in Heilongjiang has made great progress and ranks top in China after 15 years of efforts. Comparing with 1999, planting areas of green food in Heilongjiang reaches 34.9 million mu, 10.8 times than that of 2.96 million mu; Total outcome of green food is 15.81 million tons, 13.9 times of than that of 1.06 million tons; Total production value is ¥40 billion yuan, 10.2 times than that of ¥3.56 billion yuan; Increased part of income is ¥1100 yuan per capita, 17.6 time than that of ¥59 yuan. Green food varieties are increased to 839 items of 14 dominating series, including breeding, dairy products, alcohol and beverages and bee products. About the details of green food production (Table 1).

1.2 Developing tendency of green food industry

According to the analysis of green food production

in Heilongjiang province, there is a linear function between time and output, which will directly influence farmer's income. Based on tendency extension theory, we concluded following equation:

$$Y = a + bX \quad (1)$$

among:

Y is anticipation value; X is time ordinal; a, b are unknown coefficient

According to Least Square Theory, when $\sum X=0$:

$$a = \sum Y / n,$$

$$b = \sum XY / X^2$$

(2)

Based on the statistics of green food areas from 1999-2005, we get the anticipated areas in 2006. Then, $a=1602.3$, $b=486.4$. then,

$$Y=a+bX=1602.3+486.4 \times 4=3547.9$$

Therefore, we get the result that green food production value will reach ¥77.1 billion yuan, total output will reach 16.4 million tons and farmers' income will increase ¥1107.9 yuan in year 2006.

According to above theory, the development tendency of green food in Heilongjiang province is predicted as Table 2.

2. Operational structure analysis of green food enterprises in Heilongjiang province

2.1 General structure of green food enterprises in Heilongjiang province

From year 2003 to 2005, there are totally 299 enterprises got green food authentications, with 90, 94 and 115 respectively in each year, among them, 159 grain producing enterprises, 39 vegetable enterprises and 3 aquatic product enterprises. About the structure of green food enterprises (Table 4).

2.2 Structure analysis of green grain enterprises in Heilongjiang province

Grain products enterprises share the lion proportions of green food enterprises in Heilongjiang. Rice planting bases reaches the area of 6.33million mu, soybean areas is 6.83million mu, maize areas is 4.2million mu,, with the respective weights of 27%, 29% and 18%. There are 5 main green food bases which occupies 70% of total green food production, among which, rice bases centered with Suihua, Harbin and Reclamation Head Bureau have rice areas of 4.292 million mu, 69.8% of total areas; soybean bases centered with Suihua, Harbin and Heihe have soybean areas of 4.04million mu, 58.8% of total areas; maize bases centered with Suihua and Qiqihar have maize areas of 3.52million mu, 83.8% of total. Operational structure of green food enterprises is as follows (Table 5).

2.3 Structure analysis of green meat enterprises in Heilongjiang province

Stockbreeding is the main industry in Heilongjiang, which occupies 40% of total production value. Even though green stockbreeding is still a small part, it has made great progress in a certain degree in recent years. Up to the end of 2004, there were 159 authentic green breeding enterprises, which increased by 89% than the preceding year. Green dairy output is 1.587million tons, which increased by 33% than preceding year, reached 42% of total output, and this percentage is increased by 3 points; Live pigs are 0.503million heads, increased by 3.5 times; Chicks are 2.682million, increased by 4.2 times. Green pork production takes Qiqihar and Suihua as its center, with the production of 0.419million heads in year 2004,

which was 83.3% of total production. Green chicken productions are mainly in Mudanjiang and Harbin, with production of 2.57million in 2004, which was 95.8% of total output. About the detail of green meat production (Table 5).

2.4 Green food processing enterprises in Heilongjiang province

With the rapid growths in planting and breeding industries, green food processing industry also get great developments. There are 122 main enterprises with sales income over ¥30million, 42 over ¥100million and 12 enterprises are granted as national grade agricultural industrialization dragon-heads enterprises. At the end of year 2004, there were 215 green food processing enterprises, with total production value of ¥12.93billion yuan, increased by 21% than preceding year, with added value of ¥3.62billion yuan, increased by 16% than last year. There are 101 enterprises taking dairy, soybean and rice as raw materials with sales income of ¥8.79billion yuan, increased by 24.5%, and shared 66.8% of total sales of its industry. There are 18 dairy processing enterprises with total sales of ¥3.76billion yuan, increased by 46.3% than preceding year, 24 soybean processing enterprises with sales of ¥1.12billion yuan, increased by 23%, 59 green rice processing enterprises with sales of ¥3.91billion yuan, increased by 9.2%. Joint-stock companies compose 54.7% of total number of green food processing enterprises. 84.8% of them are grade A companies. About details (Table 6).

Table 1. Green food production in Heilongjiang Province

	Authentication number	areas (10.000mu)	Production value (100 million yuan)	Output (10.000 tons)	Income increased (yuan)	Exportation (100 million yuan)
1999	145	296	35.6	106	59	0.4
2000	165	750	70	450	154	
2001	281	1035	21	508	206	5.9
2002	470	1452	177	600	09	12.4
2003	610	1813	190	820	60	19.2
2004	787	280	327	1110	866	21
2005	—	3490	400	1581	1100	—

Sources:Heilongjiangyearbook, <http://greenfood.northeast.cn>

Table 2. Heilongjiang Province organic foods development tendency

Year	Areas (10.000 mu)	Production Value (100 million yun)	Output (10.000 ton)	Income Increase (yuan)
2006	3548	771	1640	1108
2007	4100	797	1848	1330
2008	4697	887	2138	1570
2009	5280	1023	2420	1801
2010	5372	1202	2669	2014

Sources: Heilongjiangyearbook, <http://greenfood.northeast.cn>

Table 3. Structure of green food enterprises in Heilongjiang province (2003-2005)

	Grain	Vegetables	Dairy	Meat	Eggs
Number	159	39	25	16	4
Weights (%)	53.2	13	8.4	5.4	1.3
	fungus	beverages	alcohol	oil	others
Number	18	27	14	16	15
Weights (%)	6.0	9.0	4.7	5.4	5.0

Sources: collected from <http://greenfood.northeast.cn>.

(Notes: for the reason of various green food are produced in the same enterprises, statistical numbers are more than actual total number, therefore, the total weight is large than 100%).

Table 4. Structure of green grain enterprises in Heilongjiang province (2003-2005)

	Rice	Soybean	Maize	Wheat	Miscellaneous
Enterprises	96	37	8	5	13
weights (%)	60.4	23.3	5.0	3.1	8.2

Sources: collected from <http://greenfood.northeast.cn>.

Table 5. Heilongjiang Province organic foods meats production enterprise structure (2003 - 2005)

	Pork	Beef	Lamb	Chicken	Geese	Rabbit meat
Number of enterprises	2	4	3	3	3	1
Weights (%)	12.5	25	18.8	18.8	18.8	6.3

Sources: collected from <http://greenfood.northeast.cn>.

Table 6. Structure of green meat enterprises in Heilongjiang province (2003-2005)

	Processing quantity 10.000 ton	Number of enterprises	Enterprises over ¥ 100million	Taxes ¥100million	Production value ¥100million
1999	69	—	1	2	10.1
2000	—	—	6	4.7	24.4
2001	222	129	12	7.6	53.7
2002	—	—	20	11.6	84
2003	378	210	27	16.5	106.9
2004	468	215	36	20.1	129.3
2005	—	—	42	23.5	160

Sources: collected from <http://greenfood.northeast.cn>.

3. Problems in green food enterprises in Heilongjiang province

Even though green food industry in Heilongjiang grows rapidly and has a very significant position in China, there are still many problems.

3.1 Too many less known and inferior brands which intensifies internal competitions

According to statistics, there were 96 registered green rice and 37 green soybean enterprises in Heilongjiang in years 2003-2005. Too many unknown brands bring intensive internal competition, which

greatly undermines the composition of internal forces in competing in national and international markets.

3.2 Inferiority in quality weaken its competitiveness in international green food market

Rapid as green food industry grows, the products qualities just lingering on low levels. As we all know, green food in China is classified into Grade A and Grade AA, the later reaches the international organic food standards. At present, there is less than 10% of green food planting and organic food producing enterprise has granted Grade AA, and the areas are only 8.8% of total green food planting area, and bee products is the only one meets the international standards of organic food.

3.3 Green stock raising industry shows signs of decline in scale and has difficulty in achieving scale advantages

Heilongjiang is a big province in stock raising industry which shares half of its provincial revenue, while green stock raising develops in a small scale, some products even show the signs of decline, which makes it difficult to form scale advantage in market. There are only 19 counties have green stock raising products which is only small part of the whole industry. In 2004, green pork production was 0.285 million heads, only 2.6% of total; green beef, lamb and geese productions are respectively 0.045 million, 0.035 million and 1.333 million heads, and decreased respectively by 42%, 81% and 62% than preceding year. Further decline in production will incur economic drop in this industry.

3.4 Being in short of professionals undermines its developing potential

Green food production is in need of professionals to guarantee its products with high quality. In 2004, the total number of green food production staff was 62,000, increased by 15% than the preceding year, but there was only 3000 of them had the intermediate technical titles, which decreased by 13% than that in 2003. In short of professionals will be a great hindering factor of the whole industry.

3.5 Unreasonable benefits connection mechanism discourages industrial effectiveness

Unreasonable benefits connection mechanism and absence of statutory supervision is a common problem in national agricultural industrialization, and it is also a key blocking factor in the process of agricultural industrialization. In 2004, there were 215 food processing enterprises with green food production of 4.68million tons, while orders' quantity was 2.033million tons, decreased by 14%. Green food processing proportionate dropped from 55.7% to 43.4%.

There were 45 green food processing enterprises in red or zero profits, which was 20.9% of the total green food processing enterprises.

4. Measures to promoting green food enterprises in Heilongjiang

4.1 Creating favorable environments with beneficial governmental polices

Green food enterprises, especially virgin enterprises are greatly in need of governmental supports, which make policy innovations of great imperative. According to practical investigations, governmental supports should focus on the following aspects: a. Adjusting tax system. By taking references from other countries' successful practices and cut down tax rates.b. Increasing government's financial supports. Even though provincial finance authority has transferred ¥0.275 billion yuan to green food industry in recent 5 years, there is still a great need of capitals. Government should give more supports to technology reform in heading enterprises, permitting low interest loans to new projects and increasing investments in base construction. c. Issuing favorable loan policy. At present, heading green food enterprises commonly lack of purchasing capitals, so we suggest commercial banks give more credit beneficial supports to them.

4.2 Constructing planting bases to ensure raw material supply to well-known brands.

Raw material supply is the essential condition for green food processing, which make it imperative to construct its planting bases. Taking scale and processing capacity into account, heading processing enterprises need to construct stable raw material supply bases and increase its technical contents, optimize well-bred species and promote well-bred live stocks, meanwhile, promote agricultural standardization system and organize farmers to carry on specialized production.

Reasonable benefits connection mechanism makes for a stable planting base. Processing enterprises need to establish benefit connection with farmers and form benefit and risk share community by contracts, paying purchase deposits, granting funds, issuing materials, offering serial services, and perform joint stocks and stock cooperatives companies, therefore, turn planting base into a workshop.

4.3 Promoting communications and realizing leaping style development in green food enterprises

To improve its competitiveness in domestic and international markets, green food enterprise can rely on its own power originated from its scale and strength. In this sense, taking its small scale and inferiority in techniques into consideration, green food enterprises in

Heilongjiang province should take the path of cooperative and affiliated operation, which includes: a. Cooperating with banks to start large projects; b. Introducing large foreign capital; c. Combining with large companies.

4.4 Taking the way of collective, industrialized and integrative managements

Large organic food companies in advanced countries, such as in the USA and west Europe, have experienced collective management stage from small and medium size and finally established their dominance in world markets. Similarly, green food enterprises in Heilongjiang province need to put themselves into the world markets and global circulations. They need to organize into multiregional and multi-industrial group companies and take the strategy of high-tech, high benefits and collective managements. For green food industry in Heilongjiang, industrialization mode of production-research, planting-breeding-processing, trade-industry-agriculture will be optimized choice for its rapid developments.

4.5 Improving quality through scientific and technological innovations

Scientific and technological innovation is of key importance for heading green food enterprises in performing their well-known brands strategies, therefore, they need to increase R&D funds, about 5% of their sales income, establish research center to form technology innovation system, insist on the combination of production and research, promote scientific findings transformation. Also, they need to keep in pace with newest techniques and introduce, digest, absorb, innovate and apply new findings to promote technological contents of their products. To recruit talents, green food enterprises need to offer good welfares, improve their working and living conditions, give enough incentives for those who make great contributions in technological and managing innovations. To maintain advance in technology, the proportion of technician and senior professionals need to reach respectively 30% and 10% of their staff.

4.6 Expanding markets shares by creating well-known brands

With the development of economic globalization, international competitions are introduced in domestic markets, which makes brands a most effective tools in the increasingly intensive competitions. With no exceptions, green food industry has to resort to famous

brand strategy. Integration of various brands is the most effective method in rapid expanding manufacture scale and creating new famous brands, which can be achieved by introducing, extending and promoting brands' reputations.

5. Conclusions

Heilongjiang is a big green food production province, but it is still not a superb power in the market. There are still many defects within its structure which hinders its developments. Green food enterprises can only realize its predicted objects by finding a proper way which suit its development best.

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